

Appl. No. 10/539,368
Amdt. Dated Mar.15, 2006
Resp. to Notice of Non-Compliant Amendment of Mar.6, 2006

Amendment to the Claims:

This listing of claims (1-10) will replace all prior versions, and listing of claims in the application.

Claim 1 (original): A gas bearing system comprising two opposing substantially parallel bearing surfaces (2,3) and at least one gas duct (6) for supplying gas through an orifice (7) to the bearing gap (5) between said bearing surfaces (2,3), characterized in that at least one of said bearing surfaces (2) is provided with at least one cavity (8,9) extending over 0.3 mm^2 to 3 mm^2 of said at least one bearing surface (2).

Claim 2 (original): A gas bearing system as claimed in claim 1, characterized in that said cavity (8,9) extends over 0.5 mm^2 to 2 mm^2 of the bearing surface (2).

Claim 3 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claim 1s~~, characterized in that the content of said cavity (8,9) is between 0.3 mm^3 and 4 mm^3 , preferably between 0.5 mm^3 and 2 mm^3 , more preferably between 0.7 mm^3 and 1.5 mm^3 .

Claim 4 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claim 1s~~, characterized in that said gas duct (6) supplies gas to

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said cavity (8) through an orifice (7) in the wall of said cavity (8).

Claim 5 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claim 1~~, characterized in that the depth of the cavity (8,9) is at least two times, preferably at least four times, more preferably at least six times the diameter of said orifice (7).

Claim 6 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claims 1~~, characterized in that said orifice (7) has a diameter between 0.05 mm and 0.3 mm, preferably between 0.07 mm and 0.25 mm, more preferably between 0.1 mm and 0.2 mm.

Claim 7 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claims 1~~, characterized in that the dimension of the cavity (8,9) in a direction parallel to said bearing surface (2) is between 0.5 mm and 2.5 mm, preferably between 0.5 mm and 1.5 mm, more preferably between 0.7 mm and 1.2 mm.

Claim 8 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claims 1~~, characterized in that the cavity (8,9) has a substantially cylindrical shape, the cylindrical axis

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being directed substantially perpendicularly to said substantially parallel bearing surfaces (2,3).

Claim 9 (currently amended): A gas bearing system as claimed in ~~any one of the preceding claims~~, 1 characterized in that the depth of the cavity (8,9) is between 0.3 mm and 2 mm, preferably between 0.5 mm and 1.5 mm, more preferably between 0.7 mm and 1.2 mm.

Claim 10 (currently amended): A high precision machine comprising a gas bearing system, characterized by a gas bearing system as claimed in ~~any one of the preceding claims~~ 1.